

ANNOUNCEMENT OF FEDERAL FUNDING OPPORTUNITY

EXECUTIVE SUMMARY

Federal Agency Name: National Environmental Satellite, Data, and Information Service (NESDIS), National Oceanic and Atmospheric Administration (NOAA), Department of Commerce

Funding Opportunity Title: Research in Satellite Data Assimilation for Numerical Weather and Climate Prediction Models

Announcement Type: Initial Announcement

Funding Opportunity Number: NESDIS 2004-1

Catalog of Federal Domestic Assistance (CFDA) Number: 11.440, Environmental Sciences, Applications, Data, and Education.

Dates: Letters of Intent must be received by NOAA/NESDIS no later than 5 p.m. Eastern Daylight Time, August 1, 2003, and full proposals must be received no later than 5 p.m. Eastern Daylight Time, October 1, 2003. Applicants who have not received a response to their letter of intent within four weeks should contact the appropriate Technical Point of Contact. We anticipate that review of full proposals will be completed by December 1, 2003, and funding should begin during the summer of 2004. Applicants should use June 1, 2004, as the proposed start date on proposals, unless otherwise directed by the appropriate Technical Point of Contact. All proposals must be submitted in accordance with the guidelines below. Failure to heed these guidelines may result in proposals being returned without review.

Funding Opportunity Description: The recently established NOAA/National Aeronautics and Space Administration (NASA)/Department of Defense (DoD) Joint Center for Satellite Data Assimilation (JCSDA) announces the availability of Federal assistance for research in the area of satellite data assimilation in numerical weather and climate prediction models. The goal of JCSDA is to accelerate the use of observations from Earth-orbiting satellites in operational numerical prediction models for the purpose of improving weather forecasts, improving seasonal to interannual climate forecasts, and increasing the physical accuracy of climate data sets. The advanced instruments of current and planned NOAA, NASA, DoD, and international agency satellite missions will provide large volumes of data on atmospheric, oceanic, and land surface conditions with accuracies and spatial resolutions never before achieved. JCSDA will ensure that the Nation realizes the maximum benefit of its investment in space as part of an advanced global observing system. Funded proposals will help accelerate the use of satellite data from both operational and experimental spacecraft in operational and product driven weather and climate prediction environments, develop community radiative transfer models, develop improved surface emissivity models, and advance data assimilation science.

Prospective applicants should review JCSDA documentation at:

JCSDA information page: <http://jcsda.gsfc.nasa.gov/NOAA/NCEP> data assimilation system:
<http://www.emc.ncep.noaa.gov/gmb/gdas/NASA/DAO> data assimilation system:
<http://polar.gsfc.nasa.gov/index.php>.

NASA/NSIPP data assimilation system: http://nsipp.gsfc.nasa.gov/research/research_main.html

FULL ANNOUNCEMENT

I. Funding Opportunity Description

A. Program Objective

The NOAA/NASA/DoD JCSDA is a distributed center that engages units of NASA: Goddard Space Flight Center (GSFC) Data Assimilation Office (DAO) and Seasonal-to-Interannual Prediction Project (NSIPP); NOAA: NESDIS Office of Research and Applications (ORA), National Weather Service (NWS) National Centers for Environmental Prediction /Environmental Modeling Center; and Office of Oceanic and Atmospheric Research (OAR); US Navy: Oceanographer of the Navy and Office of Naval Research (ONR), Naval Research Laboratory(NRL); and US Air Force Air Weather Agency. The Joint Center's goal is to accelerate the abilities of NOAA, DoD, and NASA to ingest and effectively use the large volumes of data from current satellite-based instruments and planned satellite missions over the next 10 years. JCSDA activities are divided into infrastructure development and proposal-driven scientific projects. Infrastructure activities will focus initially on the development and maintenance of a scientific backbone for JCSDA, including a community-based fast radiative transfer model, a community-based surface emissivity model, and numerical prediction systems for performing assimilation experiments with real and simulated observations from new and future satellite instruments. The proposal-driven scientific projects are the primary mechanism for accelerating the transition of research and technological advances in remote sensing and data assimilation into the operational and product driven weather and climate prediction environment.

This research is to accelerate the science of satellite data assimilation in numerical weather forecast models. A primary measure of impact in this solicitation will be improvement of Numerical Weather Prediction (NWP) models and forecast accuracy. For NWP applications, research can be performed with NWP models and assimilation systems similar to the NOAA or NASA systems.

Research supporting development of the radiative transfer models used in assimilation applications should be in fast radiative transfer codes such as those used in real-time NWP.

Broader research topics in data assimilation, data impact, and improvement of radiative schemes for data assimilation applications that do not have the potential for direct application to real-time NWP systems are of less interest for this announcement.

B. Program Priorities

This announcement calls for proposals for scientific projects in the high-priority project areas described below. If investigators are uncertain about the applicability of their proposed research to the priorities of JCSDA, they should discuss their ideas with the appropriate technical point of contact listed below, prior to submitting their proposals.

- (1) Radiative Transfer Models (Technical Point of Contact: Al Gasiewski, 303-497-7275, Al.Gasiewski@noaa.gov) Precise and fast means of calculating observed satellite radiances and their parametric derivatives for specific bands are essential for satellite data assimilation. Algorithms are sought for both microwave and infrared satellite bands. Proposals are encouraged that focus on: (a) fundamental issues in atmospheric absorption by gases and/or absorption and scattering by aerosols, cloud particles, and/or precipitating hydrometeors; and (b) innovative radiative transfer solutions applicable to direct radiance assimilation. In the first case, an emphasis is placed on improved dielectric, spectral line, and/or continuum models and size/shape distributions that will decrease current errors in the calculation of satellite observed radiances. In the latter case, the emphasis is on fundamental improvements to existing radiative transfer models which extend the capability to assimilate IR and/or microwave radiances within cloudy and/or precipitating regions. For example, proposals could focus on:

- (a) Continuum and/or spectral line transmittance models,
- (b) Aerosol, cloud, and precipitation size/shape distribution models,
- (c) Mixed-phase dielectric models,
- (d) Hydrometeor absorption and/or scattering models,
- (e) Microwave and IR surface emission models,
- (f) Surface reflectance models including bidirectional properties,
- (g) Algorithms for performing fast forward calculations,
- (h) Development and application of tangent linear models,
- (i) Application of advanced radiative transfer models in radiance assimilation, or
- (j) Incorporation of all four Stokes' parameters.

NOTE: This priority area is intended for fundamental improvements in radiative transfer that are not related to specific satellite instruments. The proposed research should advance the state of the art leading to improved assimilation of satellite observations in general. The radiative transfer topics in the other sections are intended to advance the use of current or planned instruments, i.e., they are more instrument specific.

- (2) Atmospheric soundings (Technical Point of Contact: Lars-Peter Riishojgaard, 301-614- 6245; Larspr@dao.gsfc.nasa.gov) The AIRS instrument was the first in a series of new high-resolution infrared sounding instruments (AIRS, CrIS, IASI) to be launched over the course of the next 5-6 years. Maximizing the impact on NWP and data assimilation systems of these new instruments has a high priority in the community. Likewise, several different areas of improvement in the use

of the currently available data from satellite sounders have been identified.

- (a) Improvement and/or enhancement to radiative transfer models for advanced sounding instruments, incorporating cloud and aerosol effects, with the aim of working toward: (1) assimilation of cloudy data, (2) aerosol correction of retrieved quantities, and (3) improved surface emissivity for use of data over land and ice (see Radiative Transfer Models, above).
 - (b) Studies addressing the use of sounder data above cloudy areas; estimation of cloud-top height for the purpose of channel selection.
 - (c) Observation System Simulation Experiments (OSSEs) for high-resolution infrared sounders (e.g., CrIS, IASI) aimed at examining the trade-off between the size of the instrument field of view and the noise characteristics.
 - (d) Data selection and thinning methods aimed at reducing the number of horizontal locations for which data are assimilated in a manner that preserves as much information as possible.
 - (e) Channel selection and/or data compression methods aimed at reducing the number of data points reported per profile at a minimum loss of profile information.
- (3) Clouds and Precipitation (Technical Point of Contact: John Derber, 301-763-8000, X7230; John.Derber@noaa.gov) The proper inclusion of clouds and precipitation observations is one of the most difficult problems in data assimilation. However, the benefits of incorporating these data are expected to be significant for directly enhancing the predictive skill of moist components (e.g., clouds, precipitation, convection, and icing) of the short- and long-term forecasts and indirectly enhancing all other components of the models.

The incorporation of cloud and precipitation data will require development of many components of the data assimilation system. These developments may include not only appropriate forward models, error statistics, bias correction and quality control, but also development of appropriate moist balances, new techniques for handling non-linearities in the balance equations or forward models, and modification of the model's parameterizations to increase compatibility with the observations and to eliminate inappropriate discontinuities. For example, proposals could focus on:

- (a) Forward models for cloud and precipitation observations from specific instruments.

- (b) Bias correction and quality control procedures for specific instruments.
 - (c) Specification of observation error statistics for specific instruments and forward models.
 - (d) Moist balance constraints to minimize cloud/precipitation spin-up/spin-down in data assimilation systems.
 - (e) Definition of background error statistics for moisture variables in assimilation systems.
 - (f) Efficient minimization algorithms for nonlinear functions resulting from cloud/precipitation assimilation.
- (4) Land Surface (Technical Point of Contact: Dan Tarpley, 301-763-8042 X117; Dan.Tarpley@noaa.gov) Satellite data contain much information about the land surface that is not now utilized in NWP and climate models. There are several reasons for this. One is the difficulty in deriving physical quantities that can be used in land surface physics packages from common remote sensing quantities. Examples are: (1) derivation of leaf area index or vegetation fraction from NDVI or basic window channel reflectances, (2) the estimation of snow fraction and snow albedo from satellite brightness measurements, and (3) estimation of surface thermal emissivity from multispectral window channel data. Another difficulty is the complexity of assimilation of satellite window band observations into complex surface models. Forward models and adjoint formulations are very difficult in the atmospheric window regions of the spectrum. For example, proposals could focus on:
- (a) Timely (for operational weather prediction) retrieval of snowpack properties, including snow fraction, snow albedo, snow depth, snow water content, and snow cover temperature, and vegetation properties, including green vegetation fraction, leaf area index, canopy temperature, soil surface temperature, and canopy roughness from satellite observations.
 - (b) Development of forward models for reflected solar radiation in atmospheric window bands for specific instruments (see Radiative Transfer Models, above), including bidirectional properties of the land surface.
 - (c) Development and demonstration in variational land data assimilation of adjoint models for land physics models and treatments for background error covariances for use with NWP models.

- (d) Intercomparison of land assimilation techniques such as adjoint models/variational methods, Kalman filters, neural networks, nudging, and direct insertion for use with NWP models.
- (5) Oceans (Technical Point of Contact: Michele Rienecker, 301-614-5642; Michele.Rienecker@gsfc.nasa.gov) Ocean data assimilation is an emerging technology with applications that span time scales from weather (hurricane forecasting, marine safety) to seasonal-to-interannual climate forecasts to longer-term climate analyses. The challenges confronting ocean data assimilation stem from the paucity of observational data to constrain the models and to provide estimates of errors and from the strong negative influence of atmospheric forcing errors on estimates of the ocean state from numerical models. It is often difficult to distinguish errors and biases in a model from those associated with external forcing. For example, proposals could focus on:
- (a) Estimation of errors and error covariance in both satellite-derived and NWP analyses of surface winds, surface stresses, and surface fluxes of sensible and latent heat and fresh water;
 - (b) Improvement of surface winds, surface stresses, and surface fluxes of sensible and latent heat and fresh water from satellite observations and NWP analyses for use in forcing ocean models, with a priority on surface winds;
 - (c) Establishing observational error covariances for surface altimeter measurements for climate applications;
 - (d) Establishing observational errors for Argo temperature-salinity profiles for climate applications;
 - (e) Optimal merger of information from satellite altimetry and Argo temperature-salinity profiles in data assimilation for large scale ocean circulation analyses;
 - (f) Ocean model bias correction during assimilation;
 - (g) Improved estimates of ocean model background error covariances;
 - (h) Improved estimates of mixed layer depth for utilization in hurricane forecasts;
 - (i) Observing system experiments to help define the requirements for remotely sensed surface salinity; or
 - (j) Improved (multi-sensor) SST retrievals with corrections for aerosol effects.

C. Program Authority

Statutory authority for this program is provided under 49 U.S.C. 44720(b); 33 U.S.C. 833d; 15 U.S.C. 5631, 15 U.S.C. 2904.

II. Award Information

A Funding Availability

Total funding available is anticipated to be approximately \$1 million. Individual annual awards in the form of grants or cooperative agreements are expected to range from \$50,000 to \$150,000, although greater amounts may be awarded. Publication of this notice does not oblige NOAA to award any specific project or to obligate any available funds. If one incurs costs prior to receiving an award agreement signed by an authorized NOAA official, one would do so solely at one's own risk of these costs not being included under the award.

B. Project/Award Period

Project duration will be 1-3 years, with funding for multi-year projects contingent on satisfactory progress in prior years and funding availability. There is no guarantee that sufficient funds will be available to make awards for all projects, nor that all research areas of interest will be supported.

C. Type of Funding Instrument

Proposals selected for funding from non-Federal applicants will be funded through a grant or cooperative agreement. A grant will be awarded where the proposed work is considered substantially independent work. A cooperative agreement will be awarded where there is substantial involvement by NOAA in the proposed work. Examples of substantial involvement may include but are not limited to, proposals for collaboration between NOAA scientists and a recipient scientist. Proposals selected for funding from NOAA scientists shall be effected by an intra-agency fund transfer. Proposals selected for funding from a non-NOAA Federal agency will be funded through an interagency transfer. Should funds be provided to another Federal agency, that agency is responsible for issuing any subawards or contracts called for in the project. PLEASE NOTE: Before non-NOAA Federal applicants may be funded, they must demonstrate that they have legal authority to receive funds from another Federal agency in excess of their appropriation. The only exception to this is governmental research facilities for awards issued under the authority of 49 USC 44720. Because this announcement is not proposing to procure goods or services from applicants, the Economy Act (31 USC 1535) is not an appropriate legal basis.

III. Eligibility Information

A. Eligible Applicants

Eligible applicants are institutions of higher education, other non profits, commercial organizations, state, local and Indian tribal governments and Federal agencies. Applications from non-Federal and Federal applicants will be competed against each other.

B. Cost Sharing or Matching Requirement

No cost sharing is required under this program.

C. Other - Not applicable.

IV. Application and Submission Information

A. Address to Request Application Package

Application packages may be obtained by contacting: Christine Brown, 5200 Auth Road, Room 810; Camp Springs, Maryland 20746, or by phone at (301) 763-8127, or fax to 301-763-8108, or via internet at Christine.L.Brown@noaa.gov. JCSDA does not have a direct telephonic device for the deaf (TDD capabilities can be reached through the State of Maryland-supplied TDD contact number 800-735-2258, between the hours of 8 a.m. - 4:30 p.m.).

B. Content and Form of Application Submission

(1) Letters of Intent (LOI) Instructions

The purpose of the LOI process is to provide information to potential applicants on the relevance of their proposed project to JCSDA and the likelihood of it being funded in advance of preparing a full proposal. Full proposals will be encouraged only for LOIs deemed relevant; therefore, it is in the best interest of the applicants and their institutions to submit an LOI. However, it is not a requirement. The LOI should provide a concise description of the proposed work and its relevance to the targeted priority project area. The LOI must include the components listed below. If these components are not included, the LOI risks a delayed response and may not be considered by the program reviewers.

- (a) Investigators must identify the priority project area that is being targeted in the LOI.
- (b) Investigators must specify a tentative project title in the LOI.
- (c) LOIs must include the name and institution of all principal investigators, and specify which individual is the lead Principal Investigator.
- (d) LOIs should be no more than two pages in length and must include a statement of the problem, brief summary of

work to be completed, methodology to be used, and approximate cost of the project.

Facsimile transmissions and electronic mail are acceptable for LOIs (but not for full proposals).

A panel of JCSDA Technical Liaisons will review each LOI to determine whether the LOI is responsive to the program goals as advertised in this notice. An LOI response (e-mail or letter) will be sent back to the investigator encouraging or discouraging a full proposal. The final decision to submit a full proposal will be made by the investigator.

(2) Proposals

Proposals submitted to NOAA/NESDIS JCSDA must include the original and two unbound copies of the proposal and must be received by October 1, 2003. Investigators are required to submit 3 copies of the proposal; however, the normal review process requires 10 copies. For an optimal review, investigators are encouraged to submit sufficient copies, especially color or unusually sized (not 8.5" x 11"), or otherwise unusual materials submitted as part of the proposal. Facsimile transmissions and electronic mail submissions of proposals will not be accepted. Non-Federal applicants including Co-PIs on proposals submitted by NOAA employees must submit a complete NOAA grant application package including an original signed copy of the following forms:

SF-424 - Application for Federal Assistance (Rev. 7/97)

SF-424A - Budget Information - Non-Construction Programs

SF-424B - Assurances - Non-Construction Programs

CD-511 - Certification Regarding Debarment, Suspension, and Other Responsibility Matters: Drug-Free Workplace Requirements and Lobbying

SF-LLL - Disclosure of Lobbying Activities (submit only if engaged in lobbying activities)

These forms and additional information are available on the NOAA Grants Homepage: <http://www.ofa.noaa.gov/~grants/index.html>.

(3) Required Elements

The proposals must include the required elements identified below and total no more than 10 pages in double-spaced, 12-point font format. The title page, detailed budget, investigator(s) vitae, any appendices, and grant application forms listed above are not included in the 10-page limit. Multi-year proposals up to a maximum of 3 years will be considered; however, funding beyond the first year will be dependent upon satisfactory performance and the availability of funds.

- (a) Signed title page. The title page shall provide the project title, the name(s) of the lead Principal Investigator (PI), Co-investigator name(s) if any, the respective affiliations, complete addresses, telephone, FAX, and email information. The title page will also present the total amount of Federal funds requested for each budget period. The title page shall also identify the specific research area of interest (the one most relevant area from those listed in the Program Priorities in this announcement) and clearly identify that the proposal is in response to this announcement. The title page should be signed by the PI(s) and the institutional representative of the PI's organization.
- (b) Abstract Page: An abstract should be included and should contain an introduction to the problem, rational behind the proposal, and a brief summary of work to be completed. The abstract should appear on a separate page, headed with the proposal title, institution(s), investigator(s), total proposed cost and budget period.
- (c) Results from Prior Research. The results of related projects supported by NOAA and other agencies should be described, including their relation to the currently proposed work. Reference to each prior research award should include the title, agency, award number, PIs, period of award and total award. The section should be a brief summary and should not exceed two pages total.
- (d) Project Description. The proposed project must be completely described, including identification of the problem, scientific objectives, proposed methodology, and relevance to the program priorities given earlier in this announcement.
- (e) Budget. The proposal must include total and annual budgets corresponding with the descriptions provided in the project description. A detailed budget must be included in an appendix to the proposal including a narrative providing the basis and justification of the proposed budget. Joint proposals must include detailed budgets for each institution/agency. For proposals that include co-PI's from subawards to non-Federal entities, the Federal portion of the funding should not be listed on the SF-424 and SF-424A.
- (f) Vitae. Abbreviated curriculum vitae are sought with each proposal. Reference lists should be limited to all publications in the last 3 years with up to five other relevant papers.
- (g) Current and Pending Support. For each investigator, submit a list which includes project title, supporting agency with grant number,

investigator months, dollar value, and duration. Requested values should be listed for pending support.

C. Submission Dates and Times

LOIs should be received by 5 p.m., local time, August 1, 2003. The deadline for receipt of proposals at the NOAA/NESDIS office is 5 p.m., local time, October 1, 2003. Proposals received after the deadline will be returned to the sender without further consideration. NOAA/NESDIS determines whether an application has been submitted before the deadline by date/time stamping the applications as they are physically received in the NOAA/NESDIS office.

D. Intergovernmental Review

Applications under this program are not subject to Executive Order 12372, "Intergovernmental Review of Federal Programs."

E Funding Restrictions

Funding beyond the first year will be dependent upon satisfactory performance and the continued availability of funds.

F. Other Submission Requirements

All applicants are to submit hard copy proposals only. Facsimile transmissions and electronic mail submission of proposals will not be accepted. The hard copies may be submitted by postal mail. Commercial delivery service, or hand-delivery. Proposal must be submitted to: NOAA/NESDIS; 5200 Auth Road, Room 701; Camp Springs, MD 20746.

V. Application Review Information

A. Evaluation Criteria

The evaluation criteria and weighting of the criteria are as follows:

- (1) Importance/Relevance and Applicability of Proposal to the Program Goals (35 points): This criterion ascertains whether there is intrinsic value in the proposed work and/or relevance to NOAA, federal, regional, state, or local entities. For the Satellite Data Assimilation competition this includes: Will the proposed work advance the science of assimilating satellite data in NWP models? Will the proposed project make a significant contribution to the high priority research and technical areas listed above? Does the proposed work have the potential to significantly advance the use of satellite observations in numerical weather and short-term climate prediction models? Does the proposed work have the potential for long-term (lasting) value and widespread applicability? Does the proposed work include an effective mechanism by which the project's progress can be evaluated?

- (2) Technical Merit (35 points): This criterion assesses whether the approach is technically sound and/or innovative, if the methods are appropriate, and whether there are clear project goals and objectives. For the Satellite Data Assimilation competition this includes: Is the approach technically sound? Does the proposed project build on existing knowledge? Is the approach innovative?
- (3) Overall Qualifications of Applicants (15 points): This criterion ascertains whether the applicant possesses the necessary education, experience, training, facilities, and administrative resources to accomplish the project. For the Satellite Data Assimilation competition this includes: Are the proposers capable of conducting a project of the scope and scale proposed (i.e., scientific, professional, facility, and administrative resources/capabilities)? Are appropriate partnerships going to be employed to achieve the highest quality content and maximal efficiency?
- (4) Project Costs (10 points): This criterion evaluates the budget to determine if it is realistic and commensurate with the projects needs and time-frame. For the Satellite Data Assimilation competition this includes: Is the budget realistic and commensurate with the project needs? Does the budget narrative justify the proposed expenditures?
- (5) Outreach and Education (5 points): This criterion assesses whether the project provides a focused and effective education and outreach strategy regarding NOAA's mission to protect the Nation's natural resources. For the Satellite Data Assimilation competition this includes: How will the proposed research provide a focused and effective education and outreach strategy regarding NOAA's mission in environmental prediction.

B. Review and Selection Process

An initial administrative review/screening is conducted to determine compliance with requirements/completeness. Preapplications will be reviewed as described in Section IV. B.(1). All proposals will be evaluated and individually ranked in accordance with the assigned weights of the above evaluation criteria by at least 3 independent peer reviewers. These reviewers may include both Federal and non-Federal individuals. The merit reviewers ratings are used to produce a rank order of the proposals. The Selecting Official shall award in the rank order unless the proposal is justified to be selected out of rank order based upon one of the selection factors provided below. The Program Official and/or Selecting Official may negotiate the funding level of the proposal. The Selecting Official makes final recommendations for award to the Grants Officer who is authorized to obligate the funds and execute the award.

C. Selection Factors

The merit review ratings shall provide a rank order to the Selecting Official for final funding recommendations. The Selecting Official shall award in the rank order unless the

proposal is justified to be selected out of rank order based 2.b., 2.c. and 2d. of the following factors:

- (1) Availability of funding
- (2) Balance and Distribution of Funds:
 - (a) Geographically: The Selecting Official may take into account the need to spread awards geographically, among research areas, and among institutions/organizations/agencies.
 - (b) By type of institutions: While an institution/organization/agency may submit more than one application, the selecting official may limit the awards to only one per institution/organization/agency.
 - (c) By type of partners: The Selecting Official may take into account desirability of balance between government and external research support.
 - (d) By research area. The Selecting Official may take into account making a balanced program among the research areas listed in Section I.B.
 - (e) By project type.
- (3) Duplication of other projects funded or considered for funding by NOAA/federal agencies. Whether an application substantially duplicates other projects currently approved for funding or funded by NOAA or other Federal agencies may be considered by the selecting official.
- (4) Program priorities and policy factors.
- (5) Applicant's prior award performance: Unsatisfactory performance may be a basis for not funding.
- (6) Partnerships with/Participation of targeted groups.

C. Anticipated Announcement and Award Dates

Subject to the availability of funds, review of proposals will occur during the fall of 2003, and funding should begin during the summer of 2004 for most approved projects. June 1, 2004, should be used as the proposed start date on proposals, unless otherwise directed by the Program Officer.

VI. Award Administration Information

A. Award Notices

The notice of award is signed by the NOAA Grants Officer and is the authorizing document. It is provided by postal mail to the appropriate business office of the recipient organization. NOAA/NWS will notify unsuccessful applicants, in writing, by postal mail. Those proposals that are not ultimately selected for funding will be destroyed.

B. Administrative and National Policy Requirements

Administrative and national policy requirements for all Department of Commerce awards are contained in the Department of Commerce Pre-Award Notification Requirements for Grants and Cooperative Agreements published in the Federal Register on October 1, 2001 (66 FR 49917), as amended by the Federal Register notice published on October 30, 2002 (67 FR 66109). You may obtain a copy of these by notices by contacting the agency contact(s) under Section VII, or by going to the website at: www.access.gpo.gov/su_docs/aces140.html .

Applicants whose proposed projects may have an environmental impact should furnish sufficient information to assist proposal reviewers in assessing the potential environmental consequences of supporting the project.

C. Reporting

All financial and progress reports shall be submitted in triplicate (one original and two copies). Financial reports are to be submitted to the NOAA Grants Officer and Performance (technical) reports are to be submitted to the NOAA Program Officer. Financial reports are semi-annual and Performance reports are annual.

VII. Agency Contact(s)

Administrative questions: Christine Brown, NOAA/NESDIS, 5200 Auth Road, Room 701, Camp Springs, Maryland 20746, or by phone at 301-763-8127 ext. 107, fax: 301-763-8108, or e-mail: Christine.L.Brown@noaa.gov. Technical questions: Fuzhong Weng, JCSDA, 5200 Auth Road, Room 808, Camp Springs, Maryland 20746, or by phone at 301-763-8251 ext.186, or fax to 301-763-8580, or via email: Fuzhong.Weng@noaa.gov.